

IN THE ABSTRACT:

Please amend the abstract as follows:

A fluid supply apparatus with a plurality of flow lines branching out from one pressure regulator ~~with for adjustment of pressure,~~ the flow lines being arranged in parallel and constructed so that, ~~wherein a measure is taken that the operation,~~ that is, opening or closing of one flow passage will have no transient effect on the steady flow of the other flow passages. ~~E~~~~For this purpose,~~ each flow passage is provided with a time delay-type mass flow controller MFC so that when one closed fluid passage is opened, the mass flow controller on that flow passage reaches a set flow rate Q_s in a specific delay time Δt from the starting point.

~~The invention includes~~Also provided are a method and an apparatus for the above in which a plurality of gas types can be controlled in flow rate with high precision by one pressure-type flow control system. ~~To that end, a formula for calculating the flow rate of a gas is theoretically derived that flows with a pressure ratio not higher than the critical pressure ratio. From that formula, the flow factor is defined, so that the formula may be applied to a number of gas types using flow factors.~~

~~The method includes calculating the flow rate Q_c of a gas passing through an orifice according to formula $Q_c = KP_1$ ($K = \text{constant}$) with a pressure P_1 on an upstream side of the orifice set at twice or more higher than pressure P_2 on a downstream side, wherein the flow factor FF for each kind of gas is calculated as follows:~~

$$FF = (k/\gamma) \{2/(\kappa + 1)\}^{1/(\kappa - 1)} [k/(\kappa + 1)R]^{1/2}$$

~~and wherein, if the calculated flow rate of gas type A is Q_A , and, when gas type B is allowed to flow through the same orifice under the same pressure on the upstream side and at the same temperature on the upstream side, the flow rate Q_B is calculated as follows:~~

$$Q_B = (FF_B/FF_A)Q_A$$

where

γ_s = ~~concentration of gas in standard state;~~

κ = ~~ratio of specific heat of gas;~~

R = ~~constant of gas;~~

K = ~~proportional constant not depending on the type of gas;~~

FF_A = ~~flow factor of gas type A; and~~

FF_B = ~~flow factor of gas type B.~~

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